

Work Order ID 152622***152622***

Page 1

Tuesday, November 01, 2016 1:35:36 PM

Item ID: D6104-009 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Round Billet, 17-4
Start Date: 11/3/2016 Start Qty: 5.00 ***5*** Cust Item ID:
Required Date: 11/17/2016 Req'd Qty: 5.00 ***5*** Customer:
Reference:

Approvals: Process Plan: DAS 21 9-89 Date: NOV 01 2016 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6104	Rev B								
100	PURCHASING	0.00							
100									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <u>34163</u> a)Description: S.S round billet b) Ø5.25" x 4.100" longc) Tolerance on all dimensions are +0.030"/-0.000"d) Material: 17-4PH Stainless steele) Material certification required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								
120	QC6- Inspect dimensions to drawing	0.00							
120									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6104								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																							
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																							OTHER :																																								

Work Order ID 152622***152622***

Page 2

Tuesday, November 01, 2016 1:35:36 PM

Item ID: D6104-009

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Round Billet, 17-4

Start Date: 11/3/2016 Start Qty: 5.00

5

Cust Item ID:

Required Date: 11/17/2016 Req'd Qty: 5.00

5

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

Identify as per dwg & Stock Location MAT043

0.00

130

Packaging

Memo

0.00

Packaging

LOCATION: MAT043

50mf
11/11/13

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

DAS
21
9-09NOV 14 2016DAS
21
9-09NOV 14 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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OTHER : ☐																					

Picklist Print

Tuesday, November 01, 2016 1:35:39 PM

Page 1

Work Order ID: 152622

152622

Parent Item: D6104-009

D6104-009

Parent Item Name: Round Billet, 17-4

Start Date: 11/3/2016

Required Date: 11/17/2016

Start Qty: 5.00

Required Qty: 5.00

Comments: IPP A: 02.07.11New Issue KJ

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-009P		Purchased	No			110	Each	0.0000	1	5			
D6104-009P									**				
17-4 SS Roundbar 5.25"Od													

5x SP/16-11-8

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

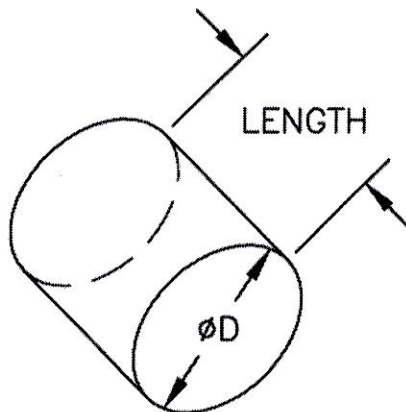
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OTHER :																																																																				



DESIGN RT	DRAWN BY [Signature]	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED
02.11.29 [Signature]

SPECIFICATION CONTROL DRAWING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 150622 MJS
10-11-01

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34163**

Purchase Order Date 11/3/2016

PO Print Date 11/3/2016

Page Number 3 of 3

Order From :
METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via: Yours ppd

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB Destination-Collect

5	D6104-009P	✓	17-4 SS Roundbar 5.25"Od	11/16/2016	5.00	✓	\$75.20	\$376.00
				Yes	Each			
				11/16/2016				

AS PER DWG D6104 REV. B
B152622

MATERIAL: 17-4 PH AS PER AMS 5643 OR AISI 630

SIZE: 5.25" DIA. X 4.10" LENGHT

TOLERANCE AS PER QUOTE +.030"/-.000"

9-88
DAS
2016

NOV 08 2016

Line Total: \$376.00

6	71401-45		procurement quality clauses	11/16/2016	1.00		\$0.00	\$0.00
				No				
				11/16/2016				

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of materila conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

Line Total: \$0.00

PO Total: \$2,439.00

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 1

Change Date: 11/3/2016

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3120677

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 07-NOV-16	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 3120677-2	

Shipment Details	Final Destination Branch - TOR
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Order No 4556141	Line No 2	Item No 6004.MO	Description 5.2500.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 4.1 IN (+ .1250/- .0000 IN (USE HT # 261300 ONLY)) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643 ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com
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Purchase Order No 34163	Part Number YOUR ITEM NUMBER: D6104-009	Ordered Qty 5.00 PCS	Invoice Qty 5.00 PCS
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Details	ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS	NOV 08 2016
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Delivery No. 120648034	Mill VALBRUNA CORPORATION	Heat Number 	Mech Id	PCS 5	Width (IN)	Length (IN)	Shipped Qty(LBS) 129.4192
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DAS
26
9-89



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 2 of 2

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These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Chris Glat

Date:

Name:

NOV 07 2016



NOV 08 2016

DAS
26
9-89

**VALBRUNA**

SLATER STAINLESS, INC.

2400 TAYLOR STREET WEST - PO BOX 530
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5008020**

Certified on May 28, 2014 Page 1 of 2

Order I.D. 1401344 004		Order Date 5/14/14		Commodity Code 6305.25	
Dim 1 5.2500	Dim 2 .0000	Dim 3 .0000	Heat I.D. 261300	Customer I.D. 002476	Customer Purchase Order 405004764
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 630
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 421975	Weight	

Ship ToVALBRUNA CANADA LTD.
8724 HOLGATE CRESCENT
MILTON, ONTARIO L9T5Z1**Sold To**VALBRUNA CANADA LTD.
8724 HOLGATE CRESCENT
MILTON, ONTARIO L9T5Z1**Lifts: 0062**AISI 630
UNS S17400
AMS 2303FCondition A
ASTMA 564-13
AMS 5643T (except finish)3174-02 REV 37
ASMESA 564 13**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.035	.48	.022	.022	.48	15.89	4.33	.23	3.27	.03	.22	.000	.225

BRINELL HARDNESS ASTM E10-12HBW
343**TENSILE PROPERTIES ASTM E8-13a****CAPABILITY**

Cap HB	TS (PSI)	.2%YS (PSI)	%EL(4d)	%RA	AGE(F)
423	201000	179500	15.9	54.5	900

MAGNETIC PARTICLE TEST AMS2303

FREQ SEV

AVG .00 .00

MACRO ASTM E340-00/E381-01MACRO
OK
OK
OKDAS
9-03
an 16/11/13**GRAIN SIZE ASTM E112-12**

GRAIN SIZE	Etchant	Magnification X
6	Marbles	100

PERCENT FERRITE (AMS 2315)

% FERRITE	Etchant	Magnification X
.4	Marbles	100

No welding or weld repair done.

Material when shipped is free from contamination by mercury, radium, alpha source, and low melting elements.
Reduction Ratio Exceeds 4:1

Electric Furnace melted; AOD refined.

Chemical testing to one or more of the listed ASTM methods:

E415-14, E572-13, E1019-11, E1085-09, E1086-14.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

email: DHackett@valbruna.us

Dennis Hackett

**VALBRUNA**

SLATER STAINLESS, INC.

2400 TAYLOR STREET WEST - PO BOX 530
FORT WAYNE IN 46802 USA
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5008020**

Certified on May 28, 2014 Page 2 of 2

Order I.D. 1401344 004		Order Date 5/14/14		Commodity Code 6305.25	
Dim 1 5.2500	Dim 2 .0000	Dim 3 .0000	Heat I.D. 261300	Customer I.D. 002476	Customer Purchase Order 405004764
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 630
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 421975	Weight	

**Ship
To**VALBRUNA CANADA LTD.
8724 HOLGATE CRESCENT
MILTON, ONTARIO L9T5Z1**Sold
To**VALBRUNA CANADA LTD.
8724 HOLGATE CRESCENT
MILTON, ONTARIO L9T5Z1

Location of tensile fracture: inside middle of gage length.
Chemical Analysis performed at Acciaierie Valbruna, Italy.
No mercury or low melting alloy contamination. No weld repair.
Material melted in Italy, manufactured in the United States.
Material conforms to listed specifications and is DFARS compliant.
Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.
I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Email: DHackett@valbruna.us

Dennis Hackett

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: DL104-009
 DATE: 16/11/13

PO / BATCH NO.: 34163/152622

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 5
 QUANTITY INSPECTED: 5
 QUANTITY REJECTED: _____

THICKNESS ORDERED: 05.25
 THICKNESS RECEIVED: 05.300
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y ☒	
CORRECT FINISH	☒ N	
CORROSION	Y ☒	
CORRECT GRAIN DIRECTION	☒ N	
CORRECT MATERIAL	☒ N	17-4PH
CORRECT THICKNESS	☒ N	5.300
PHOTO REQUIRED	Y ☒	
CORRECT MATERIAL	☒ N	AMS 5643
CORRECT REF # TO LINK CERT	☒ N	HEAT# 261350
CORRECT MATERIAL IDENTIFICATION	☒ N	DL104-009
CORRECT M# ON THE MATERIAL	☒ N	B152622
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y ☒	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y ☒	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>[Signature]</u> DAS DATE: <u>16/11/13</u> P-03	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in